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Research Article

A CLINICAL STUDY ON THE EFFECT OF *VIRECHANA KARMA* WITH *GANDHARVAHASTADI KWATH* IN THE MANAGEMENT OF *AMAVATA* W.S.R TO RHEUMATOID ARTHRITIS

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ABSTRACT

Purpose: *Amavata*, which resembles rheumatoid arthritis, affects communities. Ayurveda is being considered as a treatment for *Amavata* because conventional medicine often fails. This study examines *Gandharvhastadi Kwatha's* management of *Amavata. Amavata* is a difficult situation (*Krichra Sadhya Vyadhi*) induced by *Vata vitiation*, *Agni Vaishamya*, and toxin accumulation. Madhavakara called it *"Sa kashtah sarva roganam,"* signifying its ferocity. *Amavata* is mostly an *Ama*-related illness, hence its treatment involves detoxification. *Virechana* (purgation therapy) and *Gandharvhastadi Kwatha* are tested for treating *Amavata* (RA). **Methods:** Open-label, randomized preliminary clinical study. Patients with classical *Amavata* symptoms and meeting inclusion and exclusion criteria were selected from G.A.C.H, Patna's OPD and IPD. The study involved 40 patients in two phases: *Amavata* assessment criteria creation and validation and clinical evaluation. The assessment instrument had patient-reported symptom scores. To verify reliability and validity, randomly chosen RA/ *Amavata* patients' data was statistically analyzed. **Results:** *Virechana* and *Gandharvhastadi Kwatha* improved various clinical indicators. Statistically substantial improvement was seen in morning stiffness (83.02%), swelling (81.67%), excessive thirst (56%), loss of appetite (80.00%), body heaviness (85.37%), and indigestion (81.39%). Patients experienced significant anti-inflammatory and pain-relieving benefits and functional gains. **Conclusion-** RA is an autoimmune condition, thus standard treatments include immunosuppressants like NSAIDs and corticosteroids, which relieve symptoms but have serious adverse effects. Modern RA treatment is inconsistent and unsafe. However, *Gandharvhastadi Kwatha*, along with *Virechana* cleansing and *Samshamana Chikitsa* (palliative treatment), is safer and more successful. This complete Ayurvedic treatment for *Amavata* reduces risks and improves outcomes.

INTRODUCTION

Amavata is a disease that poses a significant challenge to medical professionals due to its rapid progression, incurability, complications, and associated morbidity. Despite the most effective treatments available in modern medicine, *Amavata* continues to advance, rendering patients unable to perform daily functions. This progressive nature has led to its classification as a disease of remission and relapse [1].

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The term *"Amavata"* originates from two Sanskrit words: "*Ama*" and "*Vata*." *Ama* refers to toxic metabolic waste that accumulates in the body, contributing to various diseases, while *Vata* represents the aggravated *Dosha* that facilitates the spread of Ama. When these two combines and settle in the *Sleshma Sthana (Asthi Sandhi)*- the joints- it leads to a painful and debilitating condition. *Amavata* is characterized by symptoms such as joint pain *(Toda),* edema, stiffness, and restricted movement [2].

Although symptomatic relief is available, conventional treatments fail to address the root pathology, as there is no definitive cure for *Amavata*. Its clinical presentation closely resembles rheumatoid arthritis (RA), albeit with a slightly different severity pattern. Given that no other medical system has

successfully provided a complete solution, Ayurveda offers a promising alternative through its holistic therapeutic approach [3].

Rationale for Ayurvedic Management

Since *Amavata* is primarily caused by the accumulation of *Ama* and *Vata* vitiation, an *Ama-pachana* (detoxification) and *Vatahara (Vata-*balancing) treatment is essential for effective management [4]. The current study investigates the efficacy of *Gandharvahastadi Kwatha*, a classical Ayurvedic formulation known for its *Vata-Anulomana* (*Vata*-regulating) properties and traditional use in treating conditions similar to *Amavata*[5].

This study aims to provide a scientifically validated approach to Ayurvedic treatment for *Amavata*, offering a safer and more effective alternative to conventional therapies.

MATERIALS AND METHODS

Study Type

This was a clinical study focused on the *Samprapti Vighatana* (pathophysiological disruption) of *Amavata*.

AIM

1. To evaluate the efficacy of *Gandharvahastadi Kwath* in the management of *Amavata*.
2. To conduct a clinical study on *Gandharvahastadi Kwath* for managing *Amavata*.

Study Design

- Type: Open-label, randomized, preliminary clinical study.
- Location: Conducted at Government Ayurvedic College & Hospital, Patna.
- Patient Selection: Individuals with classical clinical features of *Amavata*, meeting both inclusion and exclusion criteria, were enrolled.
- Sample Size: A total of 40 patients were randomly selected for the study.
- Intervention: *Gandharvahastadi Kwath* was administered for 15 days to assess its therapeutic impact.

This study aims to establish the effectiveness of *Gandharvahastadi Kwath* as a safer and more promising alternative for the management of *Amavata.*

Inclusion and Exclusion Criteria

Inclusion Criteria

Age: 18-60 years

Sex: Both male and female (predominantly female due to higher prevalence)

Socioeconomic Status: All categories included

Clinical Presentation: Patients exhibiting classical symptoms of *Amavata* as per Ayurvedic texts, including:

- *Jwara* (fever)
- *Shula* (pain)
- *Shwayathu* (swelling/edema)
- *Kathinya* (joint stiffness)
- *Sparshasahatva* (tenderness to touch)
- *Angamarda* (body ache/fatigue)
- *Kshudhamandya* (loss of appetite/anorexia)
- *Sparshasahatva* (tenderness to touch/ sensitivity)

Exclusion Criteria

Patients with chronic joint deformity

Pregnant women

Patients diagnosed with gout or Systemic Lupus Erythematosus (SLE)

Steroid-dependent individuals

Patients with tuberculosis (any system)

Those with infective pathology in any system

Individuals suffering from renal diseases

Patient Selection

A total of 40 patients fulfilling the inclusion criteria were selected for the study.

	Patients treated with *Gandharvahastadi Kwath*
Kala	*Pragbhakta* i.e., before meal (twice/day)
Matra	50 ml
Duration	15 days
Anupana	*Gud, Saindav*
Follow-up	D15, D30, D45

Clinical Assessment will be done as Follow

Subjective Parameters

Pain *(Shula)*

Grade	Score	Feature
0	0	Nil
+	1	Pain experienced solely while movement.
++	2	Chronic pain not impacting daily activities.
+++	3	Chronic pain that impacts daily activities.

Swelling *(Shwayathu)*

Grade	Score	Feature
0	0	Nil
+	1	Pain is experienced solely during motion.
++	2	Chronic pain did not impact daily activities.
+++	3	Chronic pain perception interferes with routine tasks.

Stiffness *(Kathinya)*

Grade	Score	Feature
0	0	Nil
+	1	Pain while motion
++	2	Restricted mobility
+++	3	Total lack of mobility

Body ache (*Angamarda)*

Grade	Score	Feature
0	0	Absent
+	1	Occasional
++	2	After an increased workload
+++	3	After daily work
++++	4	Always

Anorexia *(Kshudhamandya)*

Grade	Score	Feature
0	0	Desire for food for 3 times a day
+	1	Desire for food for 2 times a day
++	2	Desire for food for once a day
+++	3	No desire for food

Objective Criteria

Tenderness *(Sparshaasahatva)*

Grade	Score	Feature
0	0	Nil
+	1	Tenderness on pressure
++	2	Tenderness on touch
+++	3	The patient refuses to permit contact with the joint.

Fever *(Jwara)*

Grade	Score	Feature
0	0	97°F to 98.5°F
+	1	98.5°F to 100°F
++	2	100°F to 102°F
+++	3	102°F to 105°F

Investigations

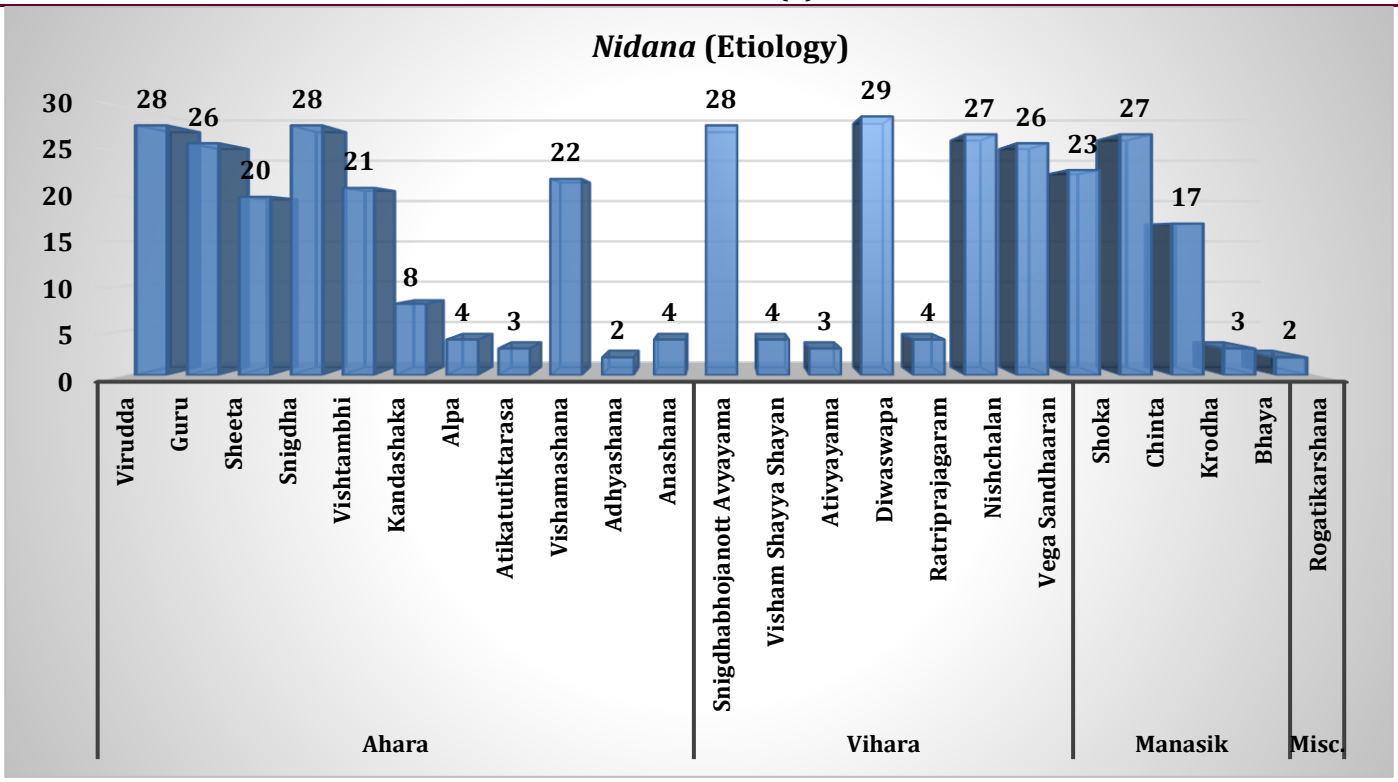
To assess the condition and monitor treatment efficacy, the following laboratory tests were conducted:
ESR (Erythrocyte Sedimentation Rate)– To evaluate inflammation levels.
Thyroid Profile– To rule out thyroid-related joint disorders.
RA Factor (Rheumatoid Factor)– To confirm rheumatoid arthritis involvement.
CRP (C-Reactive Protein)– To assess systemic inflammation.
ACCP (Anti-Cyclic Citrullinated Peptide Antibody) – A marker for RA diagnosis
Uric Acid– To differentiate *Amavata* from gout urine examination (albumin)– To check for kidney involvement.
Stool Examination (fat globules) – To assess digestive absorption issues.

OBSERVATIONS AND RESULTS

- All statistical analyses were conducted using the Chi-square (χ^2-test) and t-test.
- A p-value <0.05 was considered statistically significant.
- Observations regarding symptom reduction and statistical analysis have been compiled into tables for detailed evaluation.

***Nidana* (Etiology)**

***Nidana* (Etiology)**		**Frequency**	**Percentage**
Ahara	*Virudda*	28	70
	Guru	26	65
	Sheeta	20	50
	Snigdha	28	70
	Vishtambhi	21	53
	Kandashaka	8	20
	Alpa	4	10
	Atikatutiktarasa	3	8
	Vishamashana	22	55
	Adhyashana	2	5
	Anashana	4	10
Vihara	*Snigdhabhojanott Avyayama*	28	70
	Visham Shayya Shayan	4	10
	Ativyayama	3	8
	Diwaswapa	29	73
	Ratriprajagaram	4	10
	Nishchalan	27	68
	Vega Sandhaaran	26	65
Manasik	*Shoka*	23	58
	Chinta	27	68
	Krodha	17	43
	Bhaya	3	8
Misc.	*Rogatikarshana*	2	5



Interpretation: Above table and figure reveals that, *Nidana* (etiology) wise distribution of patients.

Ahara- Maximum patients (70%) taking *Virudda* and *Snigdha ahara* respectively. 65% patients taking *Guru*, 55% taking *Vishamashana*, 53% patients taking *Vishtambhi*, 50% patients taking *Sheeta*, 20% patients taking *Kandashaka ahara*. 10% taking *Alpa* and *Anashana ahara* respectively. 8% patients taking *Atikatutiktarasa* and 5% patients taking *Adhyashana ahara*.

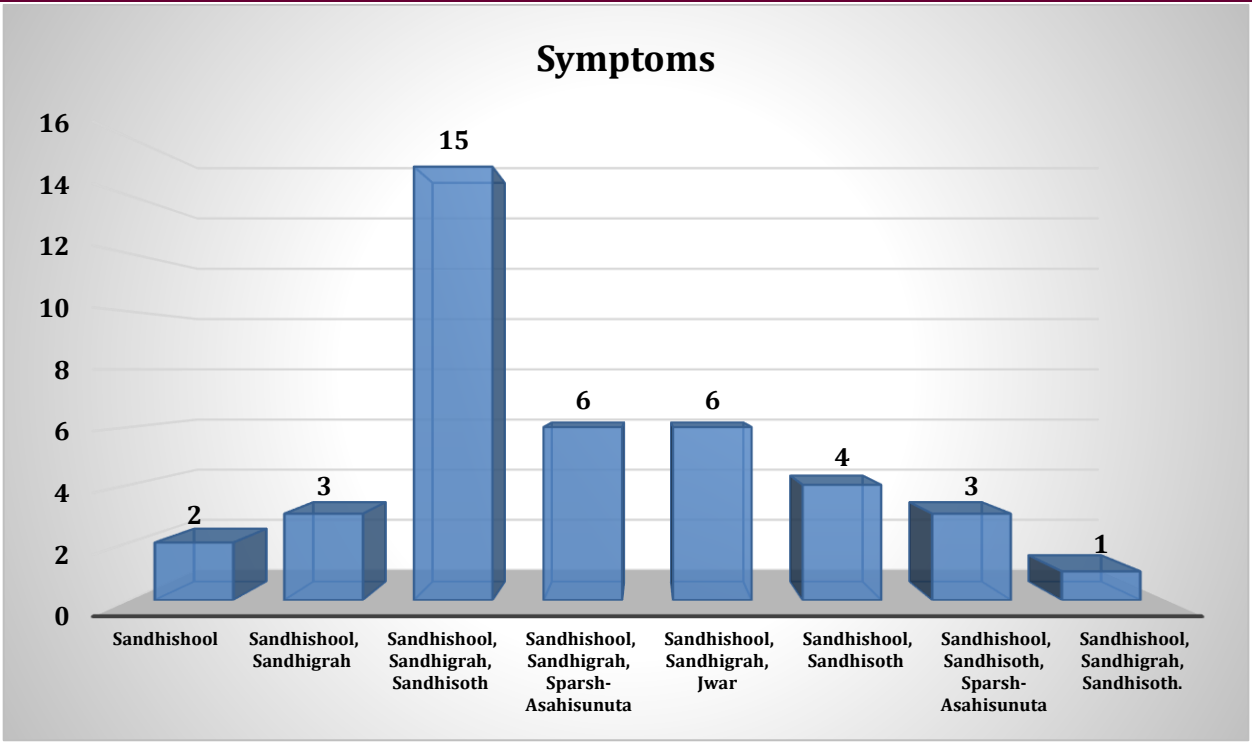
Vihara- Maximum patients (73%) taking *Diwaswapa*, 70% patients doing *Snigdhabhojanott Avyayama*, 68% patients *Nishchalan*, 65% patients with *Vega Sandhaara*, 10% patients with *Visham Shayya Shayan* and *Ratriprajagaram* respectively. 8% patients doing *Ativyayama*.

Vihara- In maximum patients (68%) *Chinta*, in 58% patients *Shoka*, in 43% patients *Krodha* and in 8% patients *Bhaya* present.

Misc.- In 5% patients *Rogatikarshana* present.

Symptoms wise observation

Symptoms	Frequency	Percentage
Sandhishool	2	5
Sandhishool, Sandhigrah	3	7.5
Sandhishool, Sandhigrah, Sandhisoth	15	37.5
Sandhishool, Sandhigrah, Sparsh- Asahisunuta	6	15
Sandhishool, Sandhigrah, Jwar	6	15
Sandhishool, Sandhisoth	4	10
Sandhishool, Sandhisoth, Sparsh- Asahisunuta	3	7.5
Sandhishool, Sandhigrah, Sandhisoth	1	2.5



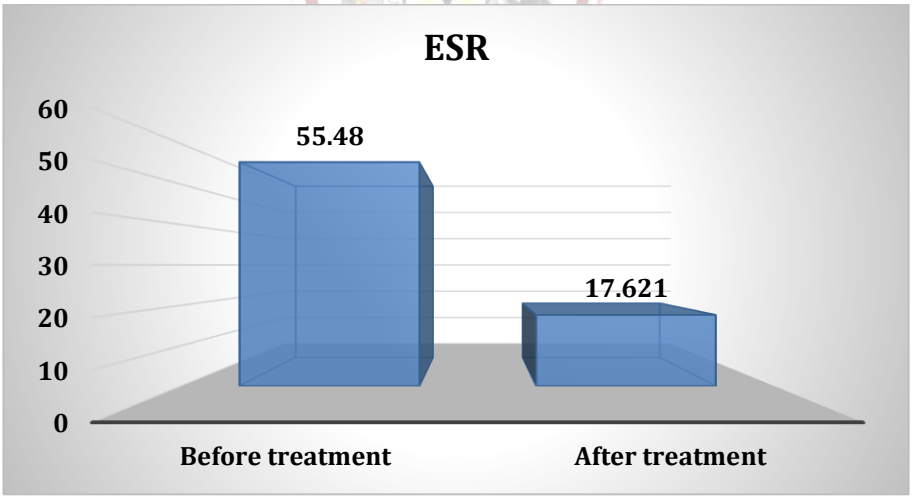
Interpretation: Above table and figure reveals that, maximum patients (37.5%) having symptoms- *Sandhishool, Sandhigrah, Sandhisoth*

15% patients having symptoms- *Sandhishool, Sandhigrah, Sparsh- Asahisunuta* and *Sandhishool*, *Sandhigrah, Jwar* respectively.

7.5% patients having symptoms- *Sandhishool, Sandhisoth, Sparsh- Asahisunuta* and *Sandhishool*, *Sandhigrah* respectively.

5% patients having *Sandhishool* and 2.5% patients having symptoms- *Sandhishool, Sandhigrah, Sandhisoth.*

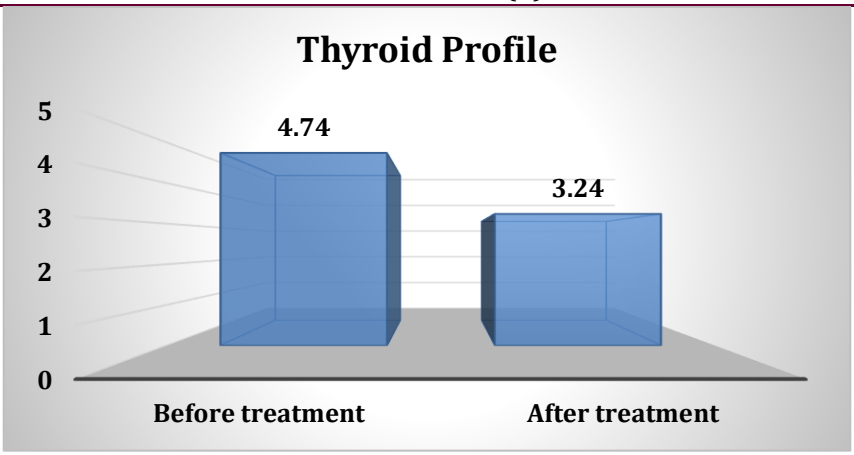
ESR: Result of before and after treatment by Paired t test is as follows:



ESR	Mean	N	Std. deviation	Test statistics	P value
Before treatment	55.48	40	28.414	8.512	<0.001
After treatment	17.621	40	4.580		

Interpretation: As p value <0.05, there is significant difference in 'ESR' after treatment. On an average it decreased significantly from 55.48 to 17.621.

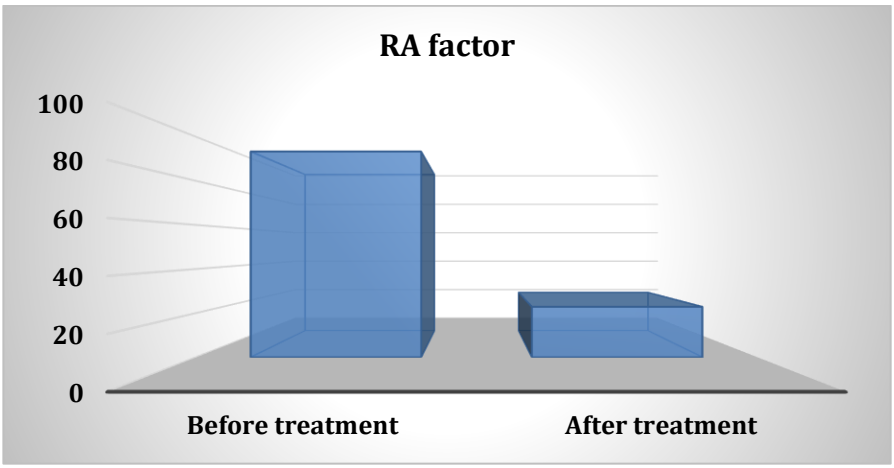
Thyroid Profile: Result of before and after treatment by Paired t test is as follows:



Thyroid Profile	Mean	N	Std. deviation	Test statistics	P value
Before treatment	4.74	40	2.93	2.974	0.005
After treatment	3.24	40	1.02		

Interpretation: As p value < 0.05, there is significant difference in 'Thyroid Profile' after treatment. On an average it decreased significantly from 4.74 to 3.24.

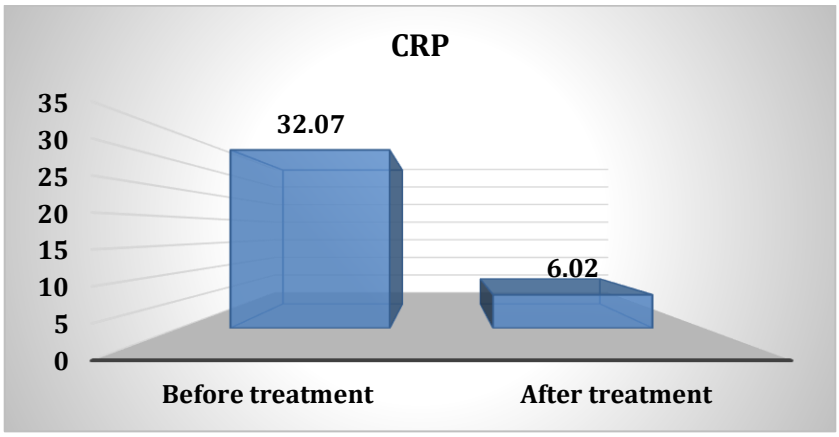
RA factor: Result of before and after treatment by Paired t test is as follows:



RA factor	Mean	N	Std. deviation	Test statistics	P value
Before treatment	93.210	40	74.44	6.951	0.005
After treatment	22.896	40	26.49		

Interpretation: As p value < 0.05, there is significant difference in 'RA factor' after treatment. On an average it decreased significantly from 93.210 to 22.896.

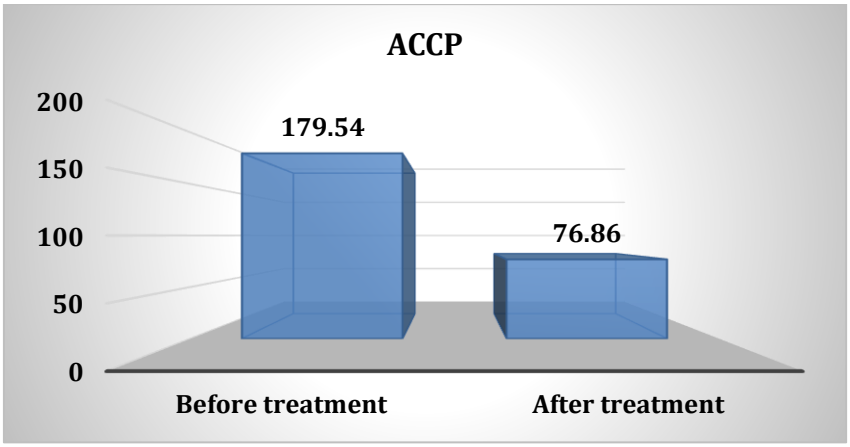
CRP: Result of before and after treatment by Paired t test is as follows:



CRP	Mean	N	Std. deviation	Test statistics	P value
Before treatment	32.07	40	36.16	4.661	<0.001
After treatment	6.02	40	4.92		

Interpretation: As p value < 0.05, there is significant difference in 'CRP' after treatment. On an average it decreased significantly from 37.07 to 6.02.

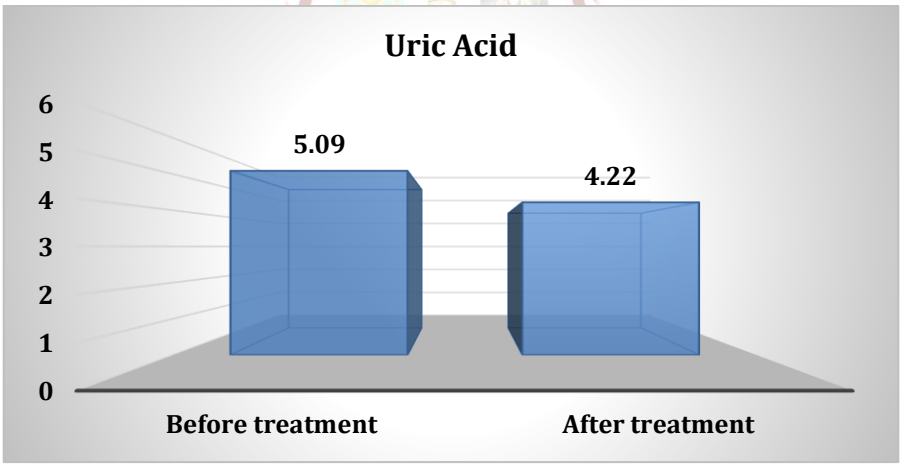
ACCP: Result of before and after treatment by Paired t test is as follows:



ACCP	Mean	N	Std. deviation	Test statistics	P value
Before treatment	179.54	40	372.055	3.518	0.001
After treatment	76.86	40	191.473		

Interpretation: As p value < 0.05, there is significant difference in 'ACCP' after treatment. On an average it decreased significantly from 179.54 to 76.86.

1) Uric Acid: Result of before and after treatment by Paired t test is as follows:



Uric Acid	Mean	N	Std. deviation	Test statistics	P value
Before treatment	5.09	40	1.50	2.684	0.011
After treatment	4.22	40	1.25		

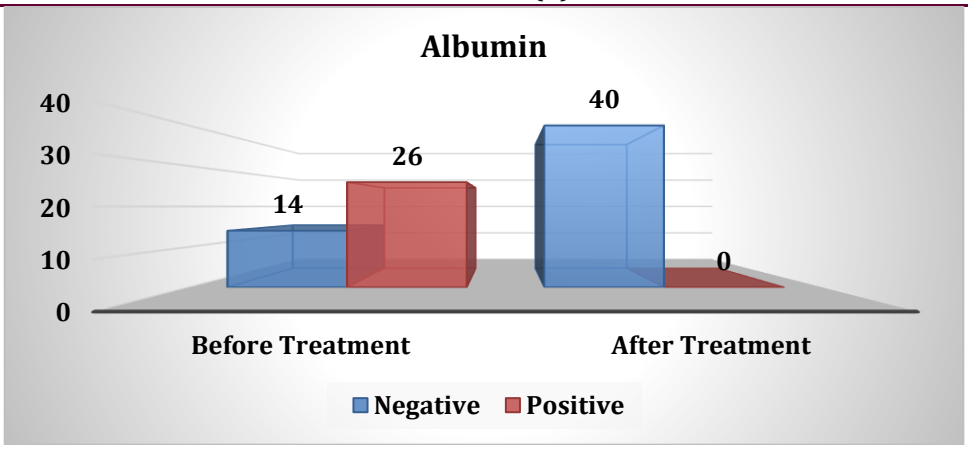
Interpretation: As p value < 0.05, there is significant difference in uric acid after treatment. On an average it decreased significantly from 5.09 to 4.22.

Overall conclusion

As per result in above all parameters, treatment is significantly effective.

It means, *Gandharva Hastadi kwath* is significantly effective in *Amavata*.

Urine Examination: Result of before and after treatment by McNemar test as follows:

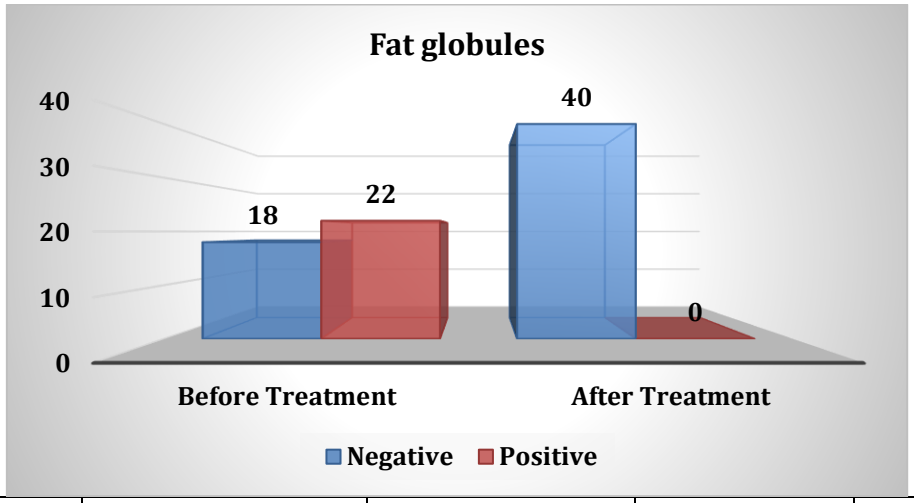


Albumin	Before Treatment	After Treatment	Test statistic	P value
Negative	14	40	24.038	<0.001
Positive	26	0		

Interpretation: As p value < 0.05, there is significant difference in 'Albumin' after treatment.

Before treatment 'Albumin' was positive in 26 patients. After treatment it was negative in all patients. So, treatment is effective to reduce 'Albumin'.

Stool Examination: Result of before and after treatment by McNemar test as follows:

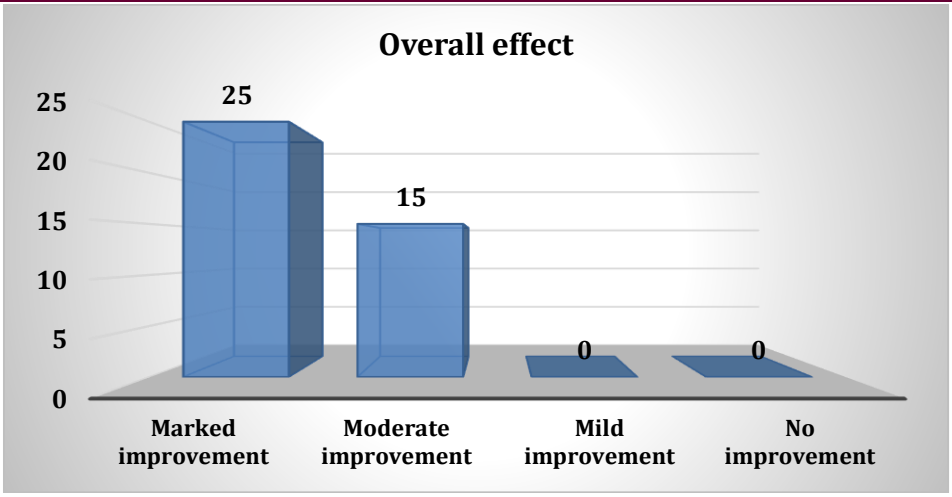


Fat globules	Before Treatment	After Treatment	Test statistic	P value
Negative	18	40	24.038	<0.001
Positive	22	0		

Interpretation: As p value < 0.05, there is significant difference in 'Fat globules' after treatment. Before treatment 'Fat globules' was positive in 22 patients. After treatment it was negative in all patients. So, treatment is effective to reduce 'Fat globules.

Overall Effect

Overall effect	Number of Patients	Percentage
Marked improvement	25	63
Moderate improvement	15	37
Mild improvement	0	0
No improvement	0	0



Interpretation: Above table and graph reveal that, 63% patients showed marked improvement after treatment, 37% patients showed moderate improvement, No patient with mild and no improvement, it means treatment showed effective results in all patient.

DISCUSSION

The primary objective of this study was to compare the clinical efficacy of *Gandharvahastadi Kwatha* in the management of *Amavata.* Both the study group and control group demonstrated improvements in key symptoms, including pain (*Shoola*), swelling (*Shwayathu)*, body ache (*Kathinya Angamarda*), and anorexia *(Kshudhamandya).* Additionally, objective criteria such as soreness (*Sparshasahatva*) and fever (*Jwara*) were analyzed using statistical methods [6].

Statistical Analysis and Therapeutic Action

The efficacy of *Gandharvahastadi Kwatha* was statistically assessed using the Chi-Square (χ^2-test) and t-test, where a p-value <0.05 indicated statistical significance. The observed symptom relief can be attributed to the *Amapachana* (digestive) effect of *Gandharvahastadi Kwatha*, which facilitates the digestion of *Ama*, unblocks *Vata* channels, and exerts *Vatashamana* and anti-inflammatory properties [7].

The formulated *Shamana Yoga* (*Gandharvahastadi Kwatha*) exhibits *Shothahara* (anti-inflammatory) and *Shula Prashamana* (pain-relieving) properties, leading to its *Rasayana* (rejuvenating) effect. This medication effectively targets imbalanced *Vata* and *Kapha doshas*, resulting in symptom alleviation. The concept of *Samprapti Vighatana* (breaking the pathological cycle) explains its pharmacological intervention by neutralizing *Samprapti Ghatakas* (disease-causing factors) [8].

Role of Oxidative Stress in *Amavata* and Antioxidant Potential of *Kwatha*

Modern research suggests that *Ama* can be correlated with reactive free radicals in the body, which are major contributors to degenerative diseases like rheumatoid arthritis. When free radicals overwhelm the body's antioxidant defense, oxidative stress exacerbates arthritis symptoms. *Gandharvahastadi Kwatha*, due to its antioxidant properties, helps counteract oxidative damage and contributes to the therapeutic benefits seen in the study [9].

Pharmacological Properties of *Gandharvahastadi Kwatha*

One of the key ingredients, *Eranda* (Ricinus communis), possesses:

Tikta (bitter), *Kashaya* (astringent), and *Madhura* (sweet) *rasa, Madhura vipaka* (sweet metabolic end effect).

Ushna veerya (hot potency)

These properties make *Eranda* an effective *Vata*-balancing herb, while *Tikta rasa, Ushna veerya, and Agni-deepana (*digestive stimulant) properties enhance its ability to combat Ama accumulation. The majority of ingredients in *Gandharvahastadi Kwatha* have *Ushna veerya* and *Vata-Kaphahara guna*, enabling them to perform functions such as:

Deepana (digestive stimulation)
Pachana (metabolic detoxification)
Rochana (appetite stimulation)
Vatanulomana (*Vata* regulation)
Shothahara (anti-inflammatory)
Vedanastapana (analgesic)

Additionally, the antioxidant properties of the formulation increase erythrocyte membrane lipid peroxide activity, catalysis, and free radical scavenging, helping prevent disease progression.

Importance of *Kwatha* Formulation and Future Scope [10]

Kwatha formulations are highly effective due to their faster absorption and rapid medicinal action. Standardization of *Gandharvahastadi Kwatha* was

conducted using pharmacognostic (organoleptic, microscopic, and macroscopic) and analytical methods. These techniques helped determine its physicochemical parameters and ensure quality control.

To further enhance its therapeutic potential, future research should explore:

Pharmacological standardization of *Kwatha* to optimize bioavailability nanotechnology-based modifications to reduce the required dosage while maintaining efficacy improved stability and safety profiles to minimize potential side effects by incorporating modern scientific advancements, *Gandharvahastadi Kwatha* could be developed into a more potent and targeted therapeutic option for *Amavata*, addressing growing concerns regarding safety, dosage, and long-term efficacy.

CONCLUSION

The clinical trial "Clinical Evaluation of *Gandharvahastadi Kwatha* in *Amavata*" found that it effectively reduces main symptoms of *Amavata*, including pain *(Shoola), Shwayathu* (swelling), joint stiffness *(Kathinya),* discomfort *(Angamarda)*- Effectiveness and statistical significance of *Gandharva hastadi Kwatha* achieved higher efficacy over conventional treatments in statistical tests. The R.A. test findings indicated no significant changes, indicating that the formulation successfully manages symptoms but does not directly affect autoimmune pathology. Comparison to modern treatments of rheumatoid arthritis *(Amavata)* is autoimmune, and current treatments, such as immunosuppressants, NSAIDs, and corticosteroids, only provide symptomatic relief and may have side effects. The long-term safety and efficacy of these conventional treatments are uncertain. A safer, more promising alternative is Ayurveda. *Gandharvahastadi Kwatha* and *Virechana* therapy eradicate disease root causes through bio-purification, preparing for *Samshaman Chikitsa* (palliative treatment). The holistic and sustainable management strategy leads to a safer and more promising therapy module for *Amavata* (RA). Thus, *Gandharvahastadi Kwatha* can replace contemporary medication by treating the condition with *Ama pachana, Vata anulomana,* and *Shothahara* qualities and managing symptoms safely.

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